

Page 1

120	QC4- 100% Inspect kits for completeness	0.00	28 9-89 MAY 16 2016
120			
QC	Memo	0.00	
Quality Control			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval			
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Work Order ID 145773

Friday, May 06, 2016 10:48:47 AM

145773

Page 2

Item ID: D407-649-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hardpoint for Heli-Utility-Pod™

Start Date: 4/21/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D407-649-011 Location: 120 PPP Rev: _____

FG

1	DAS 28 9-89	MAY 16 2016
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140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MCS	MAY 17 2016
2m 16/05/16	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

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Page 1

Work Order ID: 145773

145773

Parent Item: D407-649-011

D407-649-011

Parent Item Name: Hardpoint for Heli-Utility-Pod™

Start Date: 4/21/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B98.12.07Changed location for step 2DM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
80-007-15-4A		Purchased	No			120	Each	24.0000	24	24			
80-007-15-4A									**	<i>M 134761 XY</i>			DAS 27 9-89
Insert													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST563				24					
	DAS 28 9-89			m129865				4					
				m132954				12					
				m133077				8					
AN4-6A		Purchased	No			120	Each	496.0000	24	24			
AN4-6A									**				DAS 6 27 9-89
BOLT													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
	DAS 28 9-89			over003				400					
				M134508				200					
				M134634				200					
				ST345				96					
				M130851				39					
				M133790				57		<i>24</i>			
D2713		Manufactured	No			120	Each	4.0000	4	4			
D2713									**				DAS 6 27 9-89
Hardpoint Lug													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
	DAS 28 9-89			ST482				4					
				130833				4					
										<i>4</i>			

MAY 09 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____ _____ _____			
Misidentified ☐	☐	Past Due ☐	☐				

Picklist Print

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Page 2

Work Order ID: 145773

145773

Parent Item: D407-649-011

D407-649-011

Parent Item Name: Hardpoint for Heli-Utility-Pod™

Start Date: 4/21/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

D2755-1 Manufactured No

120 Each 9.0000 1 1

D2755-1

Hardpoint Lug

DAS
28
9-89

**

DAS
27
6 9-89

Location

Loc Qty

Loc Code

st535

9

79531

9

D2755-2 Manufactured No

120 Each 10.0000 1 1

D2755-2

Lug

DAS
28
9-89

**

DAS
27
6 9-89

Location

Loc Qty

Loc Code

st535

10

17552

2

48383

8

D2756 Manufactured No

120 Each 7.0000 6 6

D2756

Inner Doubler

DAS
28
9-89

**

DAS
27
6 9-89

Location

Loc Qty

Loc Code

ST010

7

121788

7

D2757 Manufactured No

120 Each 34.0000 6 6

D2757

Outer Doubler

DAS
28
9-89

**

DAS
27
6 9-89

Location

Loc Qty

Loc Code

Mezz

28

109790

21

77079

7

ST010

6

135875

6

MAY 09 2016

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Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																								OTHER :																																							

Picklist Print

Friday, May 06, 2016 10:48:47 AM

Work Order ID: 145773

145773

Parent Item: D407-649-011

D407-649-011

Parent Item Name: Hardpoint for Heli-Utility-Pod™

Start Date: 4/21/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

M7885/2-4-1

Purchased

No

120

Each

132.0000

96

96

M7885/2-4-1

Rivet

DAS
28
9-89

Location

Loc Qty

Loc Code

ST557

132

m132107

32

m133077

100

32
64

DAS
27
9-89

M7885/3-4-2

Purchased

No

120

Each

266.0000

126

126

M7885/3-4-2

Rivet

DAS
28
9-89

Location

Loc Qty

Loc Code

ST557

266

m132552

66

m133077

200

66
60

DAS
27
9-89

NAS1149D0463J

Purchased

No

120

Each

1,420.000

24

24

NAS1149D0463J

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

GA

328

M132035

21

M134508

307

ST260a

998

M134634

998

ST263

94

M134508

94

24

DAS
27
9-89

MAY 09 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							



REFERENCE ONLY

DAS
28
9-89

6 PARTS LIST

Qty	Part Number	Description
X	D407-649-011	407 HARDPOINT KIT INSTALLATION
4	D2713	BRACKET
1	D2755-1	AFT BRACKET LH
1	D2755-2	AFT BRACKET RH
6	D2756	INNER DOUBLER
6	D2757	OUTER DOUBLER
96	M7885/2	RIVET
126	M7885/3	RIVET
24	AN4-6A	BOLT
24	AN960JD416	WASHER
24	80-007-15-4A	INSERT - DOME HEAD

7 HARDPOINT LOAD LIMITS (REFERENCE ONLY)

The maximum limit loads on the Hardpoint Kit are 500 lb vertical load and 280 lb radial horizontal load for each individual hardpoint. The radial horizontal and vertical loads may be applied simultaneously. Any equipment attached to the hardpoints **shall not exceed these loads**.

8 CARGO HOOK LIMITATIONS (REFERENCE ONLY)

Loads applied to the Dart Hardpoint Kit Installation will limit the load carrying capacity of the cargo hook according to the following Figure. When the hardpoints are loaded to their maximum capacity, outlined in section 7 of this document, the cargo hook is limited to carrying a maximum load of 1850 lb.

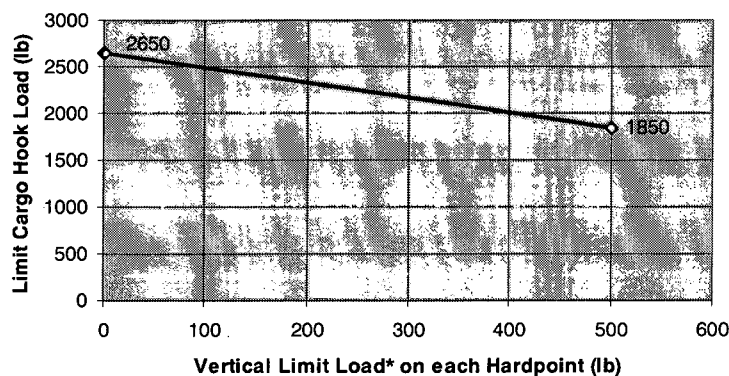


Figure 5 - Cargo Hook Limitations for Hardpoint Loads

* The Vertical Limit Load on each Hardpoint refers to the maximum allowable vertical limit load for a single hardpoint only. The 500 lb vertical limit load indicated in Figure 5 implies a maximum radial horizontal load of 280 lb, according to section 7 of this document. These limit loads should not be exceeded.